

REMARKS

Reconsideration of the present patent application is respectfully requested. Claims 1-37 are pending in this application. Claims 11-19 and 25-27 have been withdrawn from consideration. By this amendment, claims 1 and 20 have been amended and claim 38 have been added as new claims. Support for the new claim 38 and amendments can be found on page 25, lines 20-25, and on page 28, lines 13-23, of the specification as filed, as well as in the original claims and Figures, particularly in Figure 11. As such, Applicant submits that no new matter has been introduced in the new claim.

The Claims:

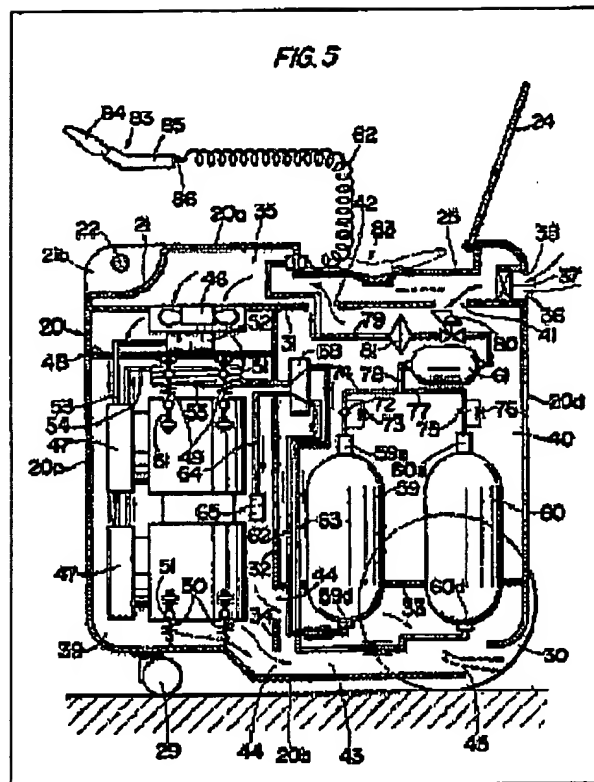
All of the claims stand rejected under prior art grounds. In this regard, the claims have been amended to more clearly describe the invention.

Claim 1:

Claim 1 has been rejected under 35 USC § 103(a) as being unpatentable over Nishino et al. (US Patent No. 5,144,945) in view of Rossen (US Patent No. 5,823,186). Claim 1 has been amended to describe an apparatus for compressing and storing an oxygen-enriched gas having, for example:

“a radial piston compressor operatively connected to said oxygen source to receive the at least 50% oxygen by volume gas therefrom, said radial compressor being capable of compressing said oxygen-enriched gas to a high pressure”

Claim 1 as amended specifically recites that the radial compressor receives the oxygen-enriched stream, such that the oxygen-enriched stream is compressed. In Nishino, the compressor (47) receives ambient air from inlet (36). Figure 5 of Nishino is reproduced below illustrating the flow path of the air.



United States Patent No. 5,144,945 - Nishino - Figure 5

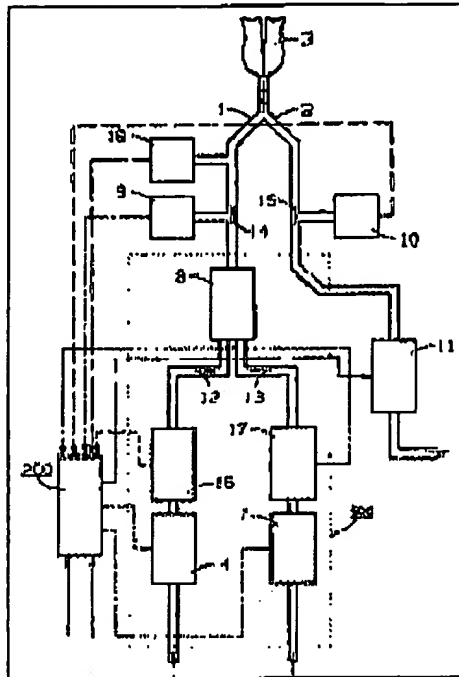
It is well established that ambient air does not contain at least 50% oxygen by volume. Ambient air is approximately 21% by volume oxygen. The chart below illustrates the composition of ambient air.

Chemical Composition of Air		
Name	Symbol	% by volume
Nitrogen	N ₂	78.084 %
Oxygen	O ₂	20.9476 %
Argon	Ar	0.934 %
Carbon Dioxide	CO ₂	0.0314 %
Neon	Ne	0.001818 %
Methane	CH ₄	0.0002 %
Helium	He	0.000524 %
Krypton	Kr	0.000114 %
Hydrogen	H ₂	0.00005 %
Xenon	Xe	0.0000087 %

Composition of Ambient Air, see:

http://www.co.miami-dade.fl.us/derm/air/library/chemical_composition_air.pdf

It is respectfully submitted that Rossen fails to cure this deficiency in Nishino. Rossen discloses a compressor (4) that is fed ambient air, which subsequently is combined with stream (13) in mixing tank (8). The compressor (4) does not compress an oxygen-enriched gaseous stream, as claimed. Figure 1 from Rossen is reproduced below.



United States Patent No. 5,823,186 - Rossen - Figure 1

Since the references do not teach each element of the claimed invention, Applicant respectfully submits that the present application is patentable over Nishino in view of Rossen.

Claims 20:

Claim 20 has been rejected under 35 USC § 103(a) as being unpatentable over Nishino & Rossen in further view of Beysel (US Patent No. 4,428,372). It is well established that for a claimed invention to be rejected on obviousness grounds, all claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). It is respectfully submitted that the asserted combination fails to teach or suggest all limitations of claim 20.

Claim 20, as amended recites a process for filling a high-pressure portable container with concentrated oxygen under high pressure that includes the steps of:

“transferring said concentrated oxygen to a radial compressor at an initial pressure, compressing said concentrated oxygen transferred to said compressor to a high pressure; and transferring said high pressure concentrated oxygen from said radial compressor to a portable container for subsequent use by a patient.”

As described above, Nishino fails to teach the transfer of concentrated oxygen to a radial compressor. Nishino discloses the transfer of *ambient air* to a compressor. Similarly, Rossen also discloses the transfer of *ambient air* to a compressor. Beysel is generally directed to an apparatus for providing breathing gas, but fails to disclose any type of compressor.

Additionally, neither Nishino nor Rosen teach compressing of the *concentrated oxygen*. Both Nishino and Rossen disclose compressing of ambient air. Beysel fails to disclose any compressing of gases.

Still further, neither Nishino nor Rossen teach the transferring of high pressure concentrated oxygen from the radial compressor to a portable container. While Nishino discloses a storage tank (61), this storage tank is not separately portable from the apparatus. Making the storage tank (61) portable is neither disclosed nor suggested by Nishino. Rossen does not disclose any portable container, nor does Beysel.

Based on the amendments and remarks made herein, it is respectfully submitted that claim 20 is patentable.

Rejection For Double Patenting:

The Office Action has rejected claims 1-10, 20-24 and 28-37 under the judicially created doctrine of obviousness-type double patenting in view of claims 1-26 of US Patent No. 5,988,165 in view of Rossen. Applicant will provide a proper terminal disclaimer to this application upon from the Office that the claims would otherwise be allowable.

Dependent Claims:

Applicant submits that the dependent claims are patentable because they at least incorporate the same limitations as their respective independent claims.

Nevertheless, Applicant submits that claim 2 is patentable on its own merits. Claim 2 recites that oxygen-enriched gas is prioritized by a portion being fed to a person and a portion being fed to a *radial compressor*. Beysel is cited in the Office Action for including a prioritizing mechanism, however Beysel does not prioritize between a person and a compressor. As such, Applicant submits claim 2 is patentable over the cited references.

It is respectfully submitted that claim 28 is patentable on its own merits. Claim 28 recites that each the sequential cylinders are located in a non-adjacent positions circumferentially about the crankshaft of the compressor. As illustrated in Figure 11 of the present application, it is easy to see that the force by the crankshaft (911) by the first piston (915) will be greater than the force exerted by each subsequent piston, 916, 917, 918 and 919. Furthermore, as force is exerted by the compression of gas in the first, largest cylinder (925), the next most large cylinder (926) is unloading, thereby causing the next largest force in the opposite direction of the largest force. This sequence is then repeated about the radial compressor such that the forces are generally balanced, thereby effectuating efficient transfer of energy. Since there is more efficient transfer of energy within the system, less energy is required to operate the apparatus. This aspect is not taught in the cited references, and, as such, claim 28 is patentable on its own merits.

It is submitted that claim 29 is patentable on its own merits. Claim 29 recites a radial compressor comprising five cylinders, five pistons located one in each one of said five cylinders, and five connecting rods, each one of said pistons being connected by a respective one of said connecting rods to said crankshaft. Applicant submits that such an arrangement is not one of mere design choice, but instead provides a design that allows the balancing of the forces on the radial compressor.

The Subsidiary References:

The other references cited as well as those cited and not relied upon have been studied but are not deemed to be as relevant as the references mentioned above.

Conclusion:

Based on the foregoing remarks and amendments, Applicant believes that all of the claims in this case are now in condition for allowance and an indication to that effect is respectfully requested. Furthermore, if the Examiner believes that additional discussions or information might advance the prosecution of this case, the Examiner should feel free to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

Date: 11/7/03

By: 

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